System Water Plan Implementation

Working together to ensure a long-term, sufficient and secure water supply for the State

December, 2005

Arizona Drought Preparedness Plan

- Governor's Drought Task Force (March 2003)
  - Address drought issues
- Three sections to Plan
  - Background & Impact Assessment Section
  - Operational Drought Plan
  - Statewide Water Conservation Strategy
- Principal intent of Plan:
  - Refine monitoring processes
  - Understanding of drought impacts
  - Limit future vulnerability
- Goals:
  - Identify impacts to water use sectors
  - Define sources of drought vulnerability & outline monitoring programs
  - Prepare drought response options & mitigation strategies

Economic and environmental impacts of drought continue to increase as the population of the state increases

Monitoring Technical Committee

Primary committee of the Drought Preparedness Plan

- Tracks changes in climate and physical conditions
- Forecasts of likely future conditions
- Critical in early warning and detection
- Facilitate preparedness
- Meets monthly
- Determines drought status as data conditions warrant
- Committee participants
  - Natural Resources Conservation Service
  - U.S. Geological Survey
  - Climate Assessment for the Southwest (UA)
  - State Climate Office (ASU)
  - National Weather Service (NOAA)
  - Division of Emergency Management
  - Salt River Project
  - Bureau of Reclamation

On-going technical data gathering and information dissemination group

Local Area Impact Assessment Groups

- Identify local drought-related impacts
- Define and assess
  - societal impacts
  - severity
  - loss and costs associated
- Identify response options
- Identify unmet needs or needs for response
- Identify and facilitate efforts to mitigate impacts
  - preparedness and reducing drought vulnerabilities
- Provide data to Monitoring Technical Committee

Important Goal – Encourage regional coordination to drought and conservation planning

Interagency Coordinating Group

- Directs state agency action to:
  - Assess,
  - Implement
  - Develop response options
- Identify pre-drought mitigation options
- Identify needs for additional resources
- Advise Governor of changes in drought status
- Reviews Plan, based on info. from 2 others
  - Recommendations for:
    - Improving monitoring
    - Implementation
    - Response

State Agencies

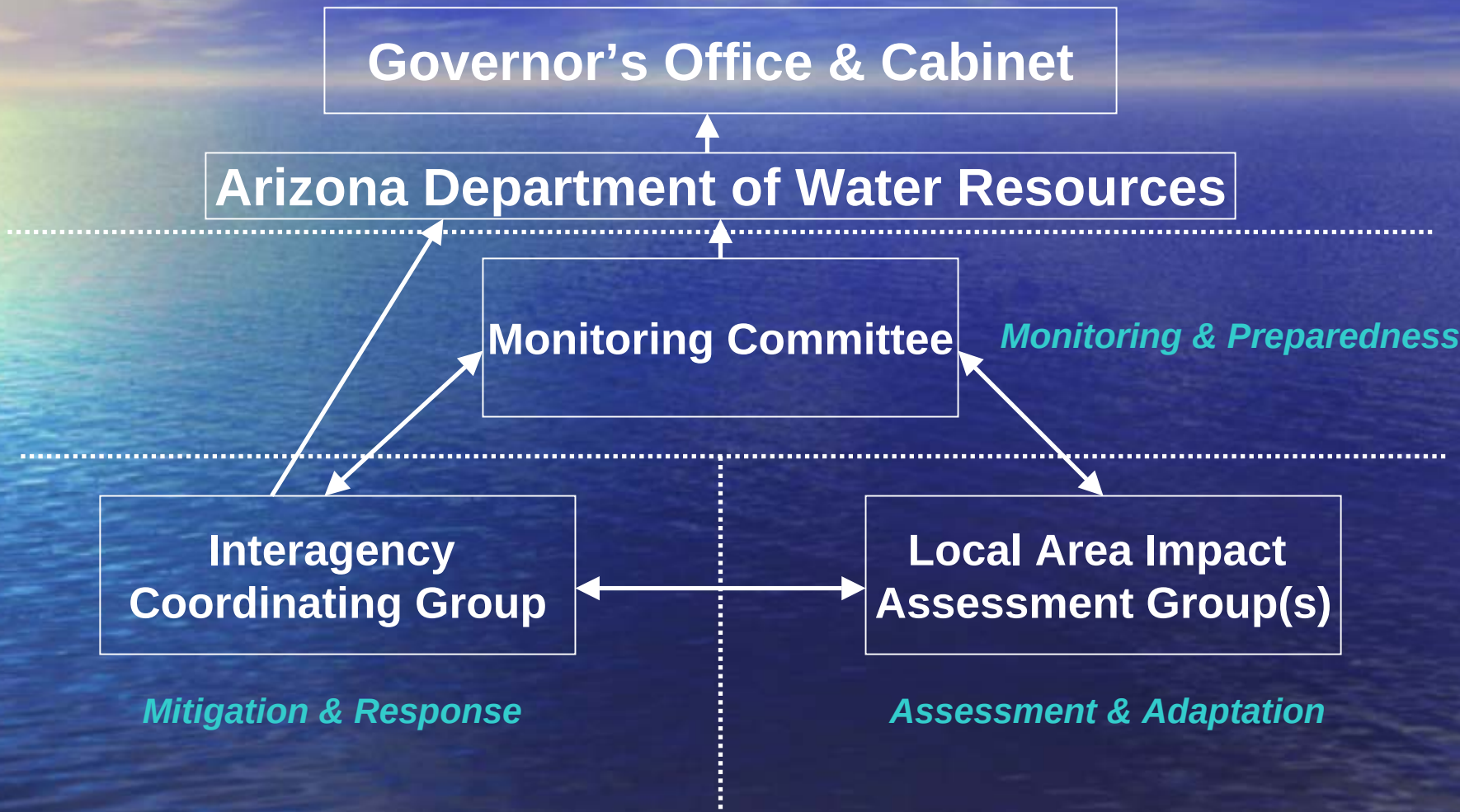
Federal Agencies

Non-governmental organizations

Tribal

Provides an integral mechanism to coordinate and integrate drought planning and management on all lands within Arizona

Organization



ADWR serves as the facilitator of the MTC and ICG, provides staff support and web services, assists with report development and public outreach

Implementation & Status

Task	Status
Monthly monitoring reports	On-going
Drought Web site	In Process
Hire Drought Coordinator & Staff	Coordinator hired
Initiate LAIAGs	On-going
Identify monitoring needs	In Process
Funding/Grants for local planning	On-going
System Water Plans & Annual Reports	In Process

System Water Plans & Annual Reports

- House Bill 2277 requires community water systems to:
  - *Maintain* records of its water withdrawals, diversions and deliveries
  - *Submit* an annual report
  - *Prepare and submit* a System Water Plan
    - Water Supply Plan (note exemption)
    - Drought Preparedness Plan
    - Water Conservation Plan (note exemption)

A public water system that serves at least 15 service connections used by year-round residents of the area served, or that regularly serves at least 25 year-round residents.

Purpose for Maintaining Records & Reporting Annually

- In response to:
  - Growing urban water use
  - Increased demands for limited resources
- Assist ADWR & policy makers:
  - Allocate limited resources
  - Direct State & Federal funds for drought mitigation
- Domestic Use Database

NOT for Regulation

Record Keeping Requirements

- Maintain records of:
  - Water withdrawals
  - Diversions
  - Deliveries
    - Metered systems
      - Current, complete and true
    - Non-metered systems
      - Estimated amounts

- Map delineating:
  - Service area
  - Distribution system

Annual Reporting – Water Use

If a community water system in an AMA is required to submit an annual report, a separate report is not needed

- Due yearly on March 31st
- If water was pumped or diverted:
  - Annual quantity pumped or diverted
  - Well registration numbers
  - Number of customers served
  - Id and number of storage facilities and capacity

Start tracking in Jan. 2006 – 1st Annual Report due March 31, 2007

Annual Reporting Cont.

- If effluent was used or received:
  - Estimated quantity generated from WWTF
  - Effluent used directly from the WWTF
  - Specific uses of effluent
- If water was received from another entity:
  - Name identification
  - Well registration numbers used to pump or divert water
  - Annual quantity received
  - Number of customers served
  - Id and number of storage facilities and capacity

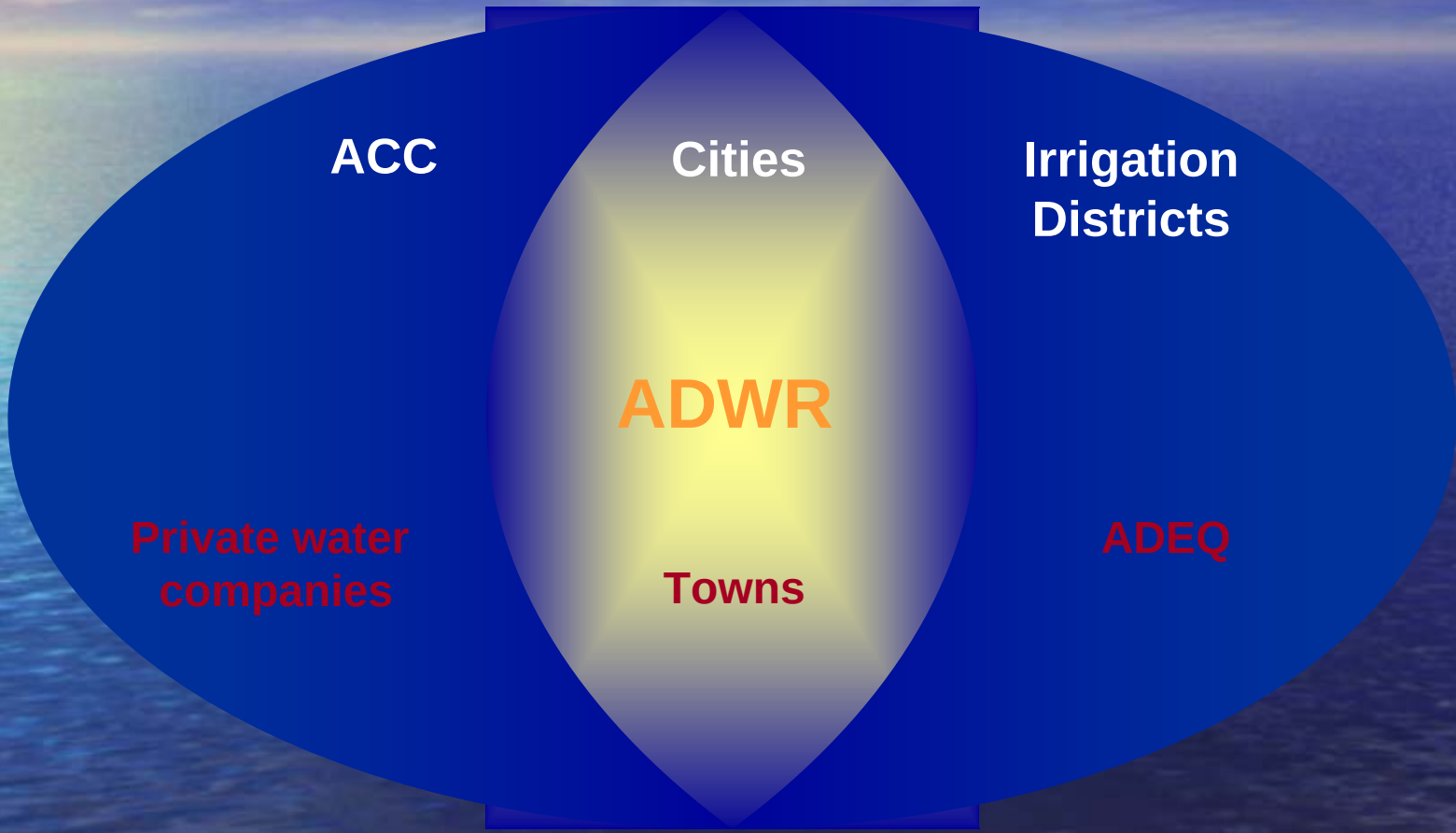
Forms will be distributed by ADWR in coordination with ACC and ADEQ to facilitate reporting of similar or identical information

Water Use for Systems Not Using Meters

Examples

- Energy consumption of well
  - Discharge information (pipe or channel flow gpm)
  - Energy usage
    - Estimate pumpage based on:
      - Pipe flow and discharge information
        - Electrical energy records
        - Natural gas energy records
      - Open channel flow and discharge info.
        - Electrical energy records
        - Natural gas energy records
      - Hour meters
      - Only electrical or natural gas energy records
        - Electric well pump
        - Natural gas well pump

Collaboration



Avoid duplication

System Water Plan

- Plan Components:
  - Water Supply Plan
  - Drought Preparedness Plan
  - Water Conservation Plan
- Joint Plan
  - More than one system serves residents within a city or town
  - Two or more systems serving that city or town may coordinate

Previously submitted required Information may not need to be submitted if approved by ADWR

- Due dates:
  - Large System = >1,850
    - January 2007
    - Updates due May 31st of 2011, 2015, 2019
  - Small System = all other community water systems
    - ADWR will develop forms to comply with requirement
    - January 2008
    - Updates due on May 31st of 2012, 2016, 2020
  - Joint Plan
    - January 2008

ADWR is developing guidance documents to assist water systems with developing plans

Exempt

All community water systems must submit a Drought Preparedness Plan

- From Water Supply Plan if:
  - Assured water supply designation
  - Must still submit a Drought and Conservation Plan
- From Water Conservation Plan if:
  - Large municipal provider in AMA
  - Small municipal provider in AMA
    - Petitions ADWR Director prior to January 2007
    - Growth projections = large municipal provider by 2012
  - Must still submit a Drought and Water Supply Plan

Previously submitted required information may not need to be submitted if approved by ADWR

System Water Plan – Water Supply Plan

Designed to evaluate water supply needs and strategy to meet needs

- Plan shall include:
  - List and Description of:
    - Service area lands
    - Sources of supply and emergency sources
    - Well registration numbers and water levels
      - Well water level exclusions:
        - Hard rock mining
        - Metallurgical processing
        - Industrial uses for the above
    - Storage and treatment facilities

System Water Plan – Water Supply Plan Cont.

- Plan shall include:
  - Map and Description of:
    - Existing transmission and distribution facilities (unless previously provided)
  - Description of:
    - Monthly system production data
      - Categorized by system's sources of supply
      - Metered systems must also provide:
        - Summary of system average daily demands
        - Max. monthly demands
        - Estimate of peak day demand for past 5 years
  - List, description and map of:
    - Existing interconnections (unless previously provided)
    - Quantities of water sold or purchased during previous 5 years (unless previously provided)
  - Analysis of present and future water supply demands for next 5, 10 and 20 years

For small community systems – a map is not required

System Water Plans – Drought Preparedness Plan

Designed to meet specific needs of the system in response to drought or water shortage conditions

- Plan shall include:
  - Contact info.
    - Identify person responsible for:
      - Directing operations during a water shortage emergency

  - Drought or emergency response stages
  - Plan of Action
    - Inform and educate public
    - Development of emergency supplies
    - Water supply or water demand management measures for each drought stage
      - Subject to ACC approval if public service corporation)
      - May be met by providing a curtailment tariff on file w/ ACC

Drought Preparedness Plan

Examples

Drought and emergency response strategies

Arizona Drought Preparedness Plan

- Stage 1 - Normal (reduce vulnerability)
- Stage 2 - Abnormally Dry (Raise Consciousness)
- Stage 3 - Moderate (Voluntary Reductions)
- Stage 4 - Severe (Curtailment)
- Stage 5 - Extreme (Eliminate Essential Water Use

City Example

- Stage 1 – Drought Alert
- Stage 2 – Drought Warning
- Stage 3 – Drought Emergency
- Stage 4 – Drought Crisis

City Example

- Stage 1 – Mild Drought Conditions
- Stage 2 – Moderate Drought Conditions
- Stage 3 – Severe Drought Conditions
- Stage 4 – Extreme Drought Conditions

System Water Plans – Water Conservation Plan

Designed to increase the efficiency of the water system, reduce waste and encourage consumer water conservation efforts and meet specific needs of system

- Plan shall include both demand and supply management measures including:
  - Measures that may be implemented to determine and control lost or unaccounted for water
  - Consideration of water rate structures that encourage efficient use of water (subject to ACC approval if public service corporation)
  - Continuing conservation education program
    - Curtailment of nonessential water uses
    - Affordable efficiency technologies for indoor/outdoor uses
    - Reuse and recycling programs

Initiate implementation of conservation plan within twelve months after receiving written notification from ADWR

Water Conservation Plan

Examples

Demand and Supply Side Conservation Measures:

- Small systems
  - Universal metering
  - Lost and unaccounted for water measures
  - Review delivery costs and rates
  - Information and education/outreach
- Medium systems
  - Water use audits
  - Retrofit programs
  - System pressure management capabilities
  - Efficiency requirements for landscape water use
- Large systems
  - Fixture replacement and promotional efforts
  - Reuse and recycling programs
  - Water use regulations
  - Integrated resource management

Water Conservation Plan Cont.

- Determining lost and unaccounted for water:
  - System audits
  - Leak detection technologies

Water Conservation Plan Cont.

Examples

- Water Rate Structures
  - Existing rate structures
    - Rate per usage
    - $ per 1,000 gallons
  - Plans for conservation incentives
    - Block/seasonal rates
    - Excessive use rates
  - Education/outreach efforts

- Educational Program
  - Efforts (pamphlets, workshops, etc.)
  - Teacher/student based education for water conservation and drought
  - Levels of discretionary use reduction
  - Programs tied to retrofit or replacement of inefficient fixtures
  - Programs that encourage or require the reuse or recycling of water
  - Curtailment plans to include stages and associated tariffs

Conservation Strategy

- Why is conservation information needed?
  - Use of conservation to manage your system
  - Assists in where to focus available resources
    - Technical assistance
    - Educational materials
    - Financial assistance

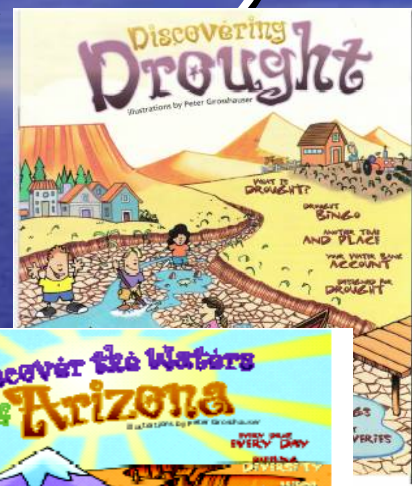
Statewide Water Conservation Office: Goals and Assistance

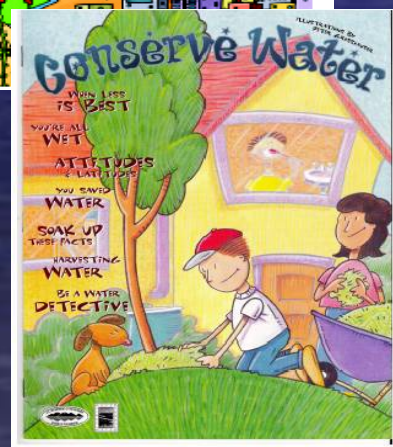
- **Encourage the Use of Best Available Technologies…focusing on water efficiency**

  - **Pilot pre-rinse spray valve program for the restaurant industry**

Statewide Water Conservation Office: Goals and Assistance (cont.)

- **Expand Outreach & Education**
  - **Discovering Drought (Completed)**
  - **Waters of Arizona (Completed)**
    - **Distributed to 92,000 4th Graders**
  - **Support 2005 Water Festivals**





Statewide Water Conservation Office: Goals and Assistance (cont.)

- **Work with local communities to assess conservation needs and develop new programs**
- **Provide assistance with conservation goal setting**
- **Develop partnerships with businesses & organizations**
- **Conservation messaging**

System Water Plan Review

- Written notification
  - Complies
    - May provide recommendations for improvement
  - Does not comply
    - 120 days for revisions or additions
      - Complies
      - Does not comply
        - Notice to governing bodies w/in service area

ADWR

Next Steps

Working Together

- Web site
- Develop annual report forms
- Guidance Document
- Develop System Water Plan template for small systems
- Web reporting
- Initiate drought and conservation planning
- Tracking

Contact Information

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